

*KEITH DENNISON*

*LINKS TO EDUCATION*

*CPD PLAN FOR EDEXCEL SURVEYING UNITS AT CENTRAL SUSSEX COLLEGE*

*(ACTION RESEARCH METHOD)*

*February to July 2008*

*February to July 2009*

*April to July 2010*

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### About me

1. I work in three areas associated with dimensional surveying and setting out: -
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### Abstract

This document records the attempts to approach student and teaching management by involving the students in all aspects of their learning and social interaction at college, while fostering the image of the lecturer as facilitator to autonomous students.

### Hypothesis

That the iterative research/praxis paradigm as a cyclical process will improve the teacher's CPD and the students learning experience.

## 1. Social Relationships

- a. "What is happening to our young people? They disrespect their elders, they disobey their parents. They ignore the law. They riot in the streets inflamed with wild notions. Their morals are decaying. What is to become of them?" –**attributed to Plato**, (app. 428-348BC).
- b. "Children are now tyrants...they no longer rise when elders enter the room. They contradict their parents, chatter before company, gobble up dainties at the table, cross their legs, and tyrannize over their teachers." – **attributed to Socrates**. (469-399BC).
- c. Separation of the generations/segregation of the young
- d. Extended adolescence/ delayed maturity/lack of parental control
- e. Parent/child relationship. Teacher/pupil relationship
- f. Being negative about kids is a popular pastime BUT based on fact. 2/3 of all arrests are under 21.  
'*Ain't it awful*', Covey, (1989).

## 2. Human Developmental Theory – Theory of Instruction.

- a. Piaget, (1950), proposed 4 stages of development. Maturity precedes learning! Acceleration is not possible. Supported by Barratt, (1975), it is pointless trying to instruct teenagers beyond their developmental stage.
- b. Vygotski, (1987), supported by Tharpe & Gallimore, (1987). Enhancement of existing developmental stage, (ZPD), is possible by collaboration, social interaction, and instructional conversation; not passive as in Piaget and Barratt.
- c. Bruner, (1966), proposed that the environment is a major factor in development, and theory of instruction should address four major aspects:
  - i. Predisposition towards learning, (*motivation*)
  - ii. The ways in which a body of knowledge can be structured so that it can be most readily grasped by the learner, (*structure*)
  - iii. The most effective sequences in which to present material, (*sequence*),
  - iv. The nature and pacing of rewards and punishments. (*Reinforcement*)

Good methods for structuring knowledge should result in simplifying, generating new propositions, and increasing the manipulation of information.

- d. Erikson, (1950).  
Erikson was a student of Sigmund Freud. He expanded Freud's work to the college years and beyond as shown in the table below.

ERIKSON'S TABLE OF POTENTIAL PERSONAL DEVELOPMENT

Stage	Age	Psychosocial Crisis	Significant Relations	Psychosocial Emphasis	Psychosocial Virtues	Psychosocial Malalignancies
1	0 to 1½	Trust vs. mistrust	Mother	To get, to give in return	Hope, Faith	Sensory distortion, Withdrawal
2	1½ to 3	Autonomy vs. doubt	Parents	To hold on, to let go	Will, Determination	Impulsivity Compulsion
3	3 to 6	Initiative vs. guilt	Family	To play	Purpose, Courage	Ruthlessness, Inhibition
4	6 to 12	Instinctive industry vs. inferiority	Neighbourhood, school, single sex gangs	To make things, (together)	Competence	Narrow virtuosity Inertia
5	12 to 18, Adolescent	Identity vs. role confusion	Peer groups, leadership models	To be, (or not), oneself	Fidelity, Loyalty	Fanaticism, Repudiation
6	Young adult	Intimacy vs. isolation	Friends, sex, competition, cooperation	To lose, (and find), oneself in another	Love	Promiscuity Exclusivity
7	Middle adult	Procreation vs. self-absorption	Workmates, household	To take care of	Care	Overextension Rejectivity
8	Late adult	Integrity vs. despair	Mankind, My kind	To be, through having been. To face not being	Wisdom	Presumption Despair

Erikson's assumptions regarding personal growth closely parallel Piaget's on cognitive development. If the child's environment is stable and healthy and the crisis at each stage is resolved, the child will be ready for the next stage.

At stage 5, (Freud's '*Sturm und Drang*', and the particular age group being considered in this document), a young person should be able to distinguish between objective and subjective reality, appreciate the perspectives of others, differentiate between symbolic and literal meaning, and begin to lose the egocentricity of earlier stages. The glandular changes of early adolescence should be over by age 17, but the realisation that adults, particularly teachers, are not always right may not have been fully realised. When it is, there could be over-reaction manifested as anger against the establishment, truculence, withdrawal, and all the symptoms familiar to those who remember their own adolescent years.

- e. Cognitive Learning, Kohlberg, (1969)

Kohlberg, an American psychologist, expanding upon Jean Piaget's work in the 1930s concerning cognitive reasoning, pioneered the study of moral development in the late 1950s. His theory of moral reasoning involved six stages through which each person passes in order, without skipping a stage or reversing their order. His theory states that not all people progress through all six stages; in fact, people who use Stage 5 or 6 moral reasoning are quite rare. Kohlberg asserted that his stages of moral development are universal, applying equally across cultural divisions. The stages are as follows: -

Pre-conventional level.

Stage 1 - Actions are judged in terms of their consequences. Those in charge set the rules.

Stage 2 - Egocentric attitudes. Can I get away with this?

Conventional level.

Stage 3 - Concern for others. Conformity to group norms.

Stage 4 - Concern for the rule of law, and preserving the social order.

Post-conventional level.

Stage 5 – Based on self-chosen universal, ethical principles, (not rules). No legal absolutes. Make changes for the greatest good of the majority.

Stage 6 – The principles of social justice are universal, abstract, ethical, and consistent.

While it may be argued that a teacher should adopt a purely objective, value-free stance, educators generally have adopted the attitude that character building and value appreciation are the real basics of education. Kohlberg's researches have indicated a systematic progression of moral development, with a potential at any one stage of reasoning at the next higher level for at least part of the time. This was demonstrated by Rest, (1973), and Turiel, (1966), whose researches showed that subjects on average reasoned above their modal stage some 50% of the time.

Stage 3 accounts for about 50% of the reasoning in the age group considered in this document, whereas only 20% is stage 3/4. It is not clear if these percentages are indicative of the numbers who think at their modal stage, or if the statistics include those who are temporarily exercising their potential for reasoning at the next stage. However, it is probably impossible to determine the amount of this contribution, and if the teacher is to positively influence moral progression in his/her students then some practical tactics are required.

Kohlberg's work parallels Piaget and Erikson in that stages of maturation are age related and occur in a progressive and incremental sequence. However there seems to be no exact relationship between Kohlberg's moral stage and actual behaviour. Hartshorne and May, (1928-1930), conducted a long series of studies of 10,000 children and adolescents and concluded that there was no discernible direct link between character/value training and actual behaviour, such as cheating. They also concluded that the risk of being found out was the single most important factor in deterring cheating, and that those who professed to abhor cheating were just as likely to cheat as anyone else.

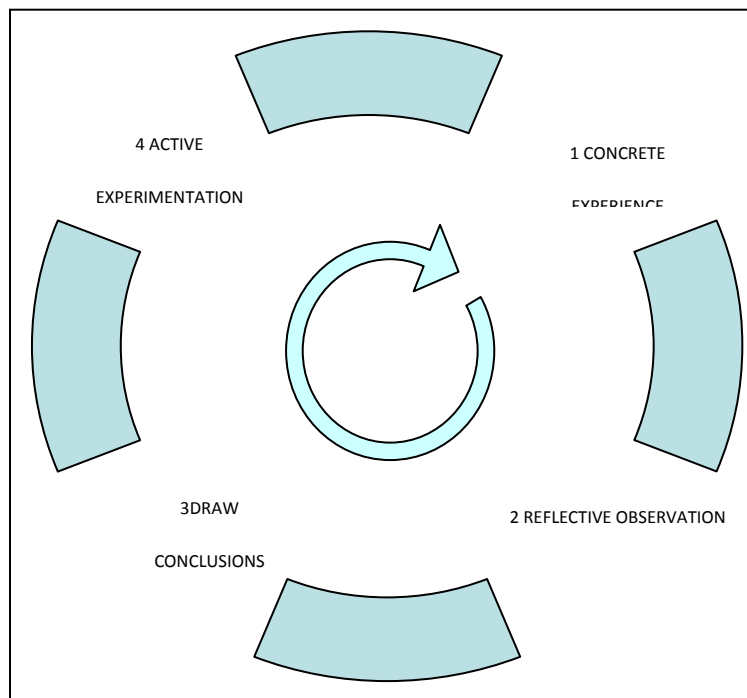
One could go on.

There seems to be a general agreement that: -

- i. Natural maturation is a greater factor in becoming an adult than motivation.
- ii. Instruction cannot be forced, but can be encouraged.
- iii. The social environment is a major factor in an individual's development.
- iv. The final goal of teaching is to promote the '*general understanding of the structure of a subject matter*', as opposed to the mastery of facts and techniques. Bruner, (1962), p6.

### 3. The Methodology - Action Research

- a. The experiential learning cycle of Kolb, (1984), *'Learning is the process whereby knowledge is created through the transformation of experience'*.



In Kolb's model, opposite, a concrete experience (1) is followed by evaluation, or reflective observation on the experience (2), then a plan of action is determined based on the preceding critical review (3), followed by applying the plan of action (4), then observing the new plan in action (1), and so on in a cyclical procedure.

The procedure has no pre-determined end, and can continue as long as is deemed necessary. A journal forms a complete record of the experimental and analytic cycles for the whole duration of the

research project.

Holly (1989, p 5) describes how,

*'Keeping a journal can facilitate observation, documentation and reflection on current and past experiences, including one's life history and the social, historical and educational conditions that usher in the present'*.

Meggison and Whitaker (1996, p 1), consider a journal to be,

*'An approach, which emphasises lifelong learning and recognises that we all have a great potential for learning and for changing what we do'*.

A journal in this context is a means to an end. The goals are already established, (see the hypothesis above), and the diary following Kolb's model will track the actions toward the goals and provide evidence of actions taken, the results of those actions, and the subsequent analysis on the effectiveness of the actions.

A concrete experience as indicated in Figure 1 needs to be defined as a start point. At this stage the experience will be necessarily imprecise, but from the second cycle onwards will address real, evidenced experiences as the later cycles challenge and refine earlier ones.

It is now possible to define the overall structure of the project.

#### 4. Cycle One

##### Starting Strategies

14 Feb 2008 to 3 July 2008 = 17 sessions of 3 hours.

Put all assignments, assignment guidance, and instructional material on my website.

At the start of each session show attendance, progress, and lesson plan on the big screen.

See the appendix.

Accept submittals by email

##### Observation, Analysis, and Action, (Session 7).

There appears a general reluctance/inability to retrieve information/assignment sheets from my website. There are a few exceptions.

Many students seem not to listen or concentrate during instruction, and then request individual tuition.

The guidance sheet is widely ignored.

13% of scheduled assignments successfully completed.

Average attendance is 67%

52% of scheduled fieldwork completed.

Changed *hand-in dates* to *target dates* to relieve pressure.

Stop every two minutes during whole class instruction to check concentration and ask random questions.

Put the progress spreadsheet on my website with password access.

Correlation with the guidance sheet partly relaxed.

##### Observation, analysis and Action, (Session 12).

Concentration in whole class teaching has improved somewhat, but individuals need further explanation.

Average attendance is 83%

94% of scheduled fieldwork successfully completed.

52% of scheduled assignments successfully completed.

First priority is to concentrate on fieldwork catch-up.

Second priority is to complete assignments.

There is still time for all to complete satisfactorily.

There is time for personal attention.

##### Observation, analysis and Action, (Session 17).

Average attendance is 67%

All fieldwork successfully completed except for one student.

73% of all assignments successfully completed.

50% of students completed all assignments and achieved a grade

Of the students who did not complete, only one has since submitted work by email, but it was fragmented, incomplete and showed no understanding of the subject.

Several students submitted images taken from my website, and seemed surprised that I was not prepared to mark my own work.

Several students tried to submit fieldwork results from a time when they were absent.

Overall success rate 6/12 = 50%

Appendix – Attendance & progress Sheet

Lesson plans are on sheet two of this workbook and relevant comments are added each session, (as a journal).

Attendance, (yellow): - those who are absent for whatever reason do not receive an attendance mark on this sheet.

Fieldwork, (blue): - A date is entered when each exercise is completed.

Assignments, (red): - A date is entered on satisfactory completion.

THURSDAY Room M212 3:00 to 6:00		SESSION No.	WEEK No.	Edexcel NC Unit 9 Surveying Processes																					
DATE	COURSE PROGRAMME	1	2	3	4	5	6	7	8	9	10	11	12												
14/02/08	1 19 INTRODUCTION. Levelling basics.	✓	✓											10											
18/02/08	2 20 HALF TERM																								
28/02/08	3 21 CHECK AN OPTICAL LEVEL, (901)	✓	✓											11											
06/03/08	4 21 UNDERTAKE A LEVELLING CIRCUIT, (901)	✓	✓	✓										11											
13/03/08	5 22 UNDERTAKE A LEVELLING CIRCUIT, (901)	✓	✓											10											
20/03/08	6 23 LINEAR SURVEY, (902)	✓	✓											7											
27/03/08	7 24 PLOT LINEAR SURVEY, (902)	✓	✓											10											
03/04/08	8 25 INSTRUCTION ON THEODOLITES	✓	✓											9											
10/04/08	9 26 STUDENT BREAK																								
17/04/08	10 27 SET UP AND USE A THEODOLITE, (903)	✓	✓											10											
24/04/08	11 28 SET OUT BUILDING BY THEOD. & TAPE, (904)	✓	✓											8											
01/05/08	12 29 INACCESSIBLE HEIGHTS, (905)	✓	✓											10											
08/05/08	13 30 Contingencies	✓	✓											8											
15/05/08	14 31 Contingencies	✓	✓											11											
22/05/08	15 32 Contingencies	✓	✓											11											
29/05/08	16 33 HALF TERM																								
05/06/08	17 34 FINAL HAND IN	✓	✓											11											
12/06/08	18 35 Contingencies	✓	✓											3											
19/06/08	19 36 Contingencies	✓	✓											5											
26/06/08	20 37 Contingencies	✓	✓											4											
03/07/08	21 38 Contingencies	✓	✓											6											
<b>TOTAL % ATTENDANCE TO DATE</b>		<b>71</b>	<b>71</b>	<b>59</b>	<b>71</b>	<b>65</b>	<b>82</b>	<b>94</b>	<b>71</b>	<b>71</b>	<b>71</b>	<b>71</b>	<b>53</b>												
TARGET DATES		FIELDWORK												SATISFACTORY COMPLETION											
28-Feb-08	2 20	Fieldwork 901 - Level Check	28/02	28/02	19/06	28/02	28/02	28/02	28/02	28/02	28/02	28/02	28/02	28/02	28/02										
13-Mar-08	3 21	Fieldwork 901 - Level Circuit	06/03	06/03	06/03	06/03	06/03	26/06	06/03	06/03	22/05	22/05	22/05	06/03	06/03										
20-Mar-08	5 23	Fieldwork 902 - Measure Stairs	13/03	13/03	27/03	13/03	13/03	13/03	13/03	13/03	13/03	13/03	13/03	13/03	27/03										
10-Apr-08	8 26	Fieldwork 903 - Theod set up	24/04	03/04	24/04	24/04	24/04	24/04	24/04	03/04	24/04	24/04	24/04	24/04	03/04										
1-May-08	10 28	Fieldwork 904 - Set out building	01/05	01/05	01/05	01/05	01/05	01/05	01/05	15/05		15/05	01/05	15/05											
8-May-08	12 30	Fieldwork 905 - Inaccessible Heights	08/05	08/05	26/06	08/05	12/06	08/05	08/05	08/05	08/05	08/05	08/05	08/05											
<b>OUTSTANDING FIELDWORK</b>														<b>1</b>											
TARGET DATES		ASSIGNMENTS												SATISFACTORY COMPLETION											
13-March-08	4 22	ASSIGNMENT 901 LEVELLING	20/03	06/06		28/03	03/07	20/03	28/03					03/04	28/03										
3-Apr-08	7 25	ASSIGNMENT 902 LINEAR SURVEY	01/05			24/04		22/05	16/05					05/06	22/05										
24-Apr-08	9 27	ASSIGNMENT 903 SET UP A THEODOLITE	24/04	03/04	24/04	24/04	24/04	24/04	03/04	24/04	24/04	24/04	24/04	24/04	03/04										
8-May-08	11 29	ASSIGNMENT 904 SET OUT A SMALL BUILDING	22/05	06/06	03/07	16/05	03/07	22/05	16/05					05/06	05/06										
5-Jun-08	14 32	ASSIGNMENT 905 INACCESSIBLE HEIGHTS	16/05	06/06	03/07	22/05	03/07	22/05	22/05					22/05	16/05										
<b>OUTSTANDING ASSIGNMENTS</b>														<b>1 2 1 4 4 4</b>											
GRADING CRITERIA		GRADING CRITERIA ACHIEVED																							
901	P1	use basic surveying terminology correctly	20-Mar	06-Jun		27-Mar	03-Jul	20-Mar	20-Mar					03-Apr	28-Mar										
902	P1		01-May			24-Apr		16-May	03-May					05-Jun	22-May										
903	P1		24-Apr	03-Apr	24-Apr	24-Apr	24-Apr	24-Apr	03-Apr	24-Apr	24-Apr	24-Apr	24-Apr	24-Apr	03-Apr	03-Apr									
904	P1		22-May	06-Jun	03-Jul	16-May	03-Jul	22-May	16-May					05-Jun	05-Jun	4									
905	P1		16-May	06-Jun	03-Jul	22-May	03-Jul	22-May	22-May					22-May	16-May	6									
905	P2	apply trigonometrical principles to basic surveying problems	16-May	06-Jun	03-Jul	22-May	03-Jul	22-May	22-May					22-May	16-May										
901	P3	describe a range of common surveying equipment	20-Mar	06-Jun		27-Mar	03-Jul	20-Mar	20-Mar					03-Apr	28-Mar										
904	P3		22-May	06-Jun	03-Jul	16-May	03-Jul	22-May	16-May					05-Jun	05-Jun										
901	P4		20-Mar	06-Jun		27-Mar	03-Jul	20-Mar	20-Mar					03-Apr	28-Mar										
904	P4		22-May	06-Jun	03-Jul	16-May	03-Jul	22-May	16-May					05-Jun	05-Jun										
905	P4		16-May	06-Jun	03-Jul	22-May	03-Jul	22-May	22-May					22-May	16-May										
903	P5	use equipment for angular measurements	24-Apr	03-Apr	24-Apr	24-Apr	24-Apr	03-Apr	24-Apr	24-Apr	24-Apr	24-Apr	24-Apr	24-Apr	03-Apr										
904	P5		22-May	06-Jun	03-Jul	16-May	03-Jul	22-May	16-May					05-Jun	05-Jun										
905	P5		16-May	06-Jun	03-Jul	22-May	03-Jul	22-May	22-May					22-May	16-May										
902	P6	produce clear and accurate drawings from linear and levelling surveys	01-May			24-Apr		16-May	16-May					05-Jun	22-May										
904	P7	set out and check corner pegs of a small building.	22-May	06-Jun	03-Jul	16-May	03-Jul	22-May	16-May					05-Jun	05-Jun										
901	M1	apply both rise and fall and height of collimation calculations to levelling fieldwork	20-Mar			27-Mar	03-Jul	20-Mar	20-Mar					03-Apr	28-Mar										
905	M2	produce results including correct calculations of heights and inaccessible distances from angular measurements	16-May	06-Jun	04-Aug	22-May	03-Jul	22-May	22-May					22-May	16-May										
904	M3	set out profiles for a small building from corner pegs.	22-May	06-Jun	03-Jul	16-May	03-Jul	22-May	16-May					05-Jun	05-Jun										
901	D1	explain the advantages of both rise and fall and height of collimation calculation methods	20-Mar					20-Mar																	
904	D2	explain the constraints on the positioning of profiles for construction, in terms of accuracy and use	22-May	06-Jun			03-Jul	22-May						05-Jun	2										
<b>GRADE AWARDED</b>		<b>D M D M M M</b>																							

## 5. Cycle Two

### Starting Strategies

12 Feb 2009 to 4 July 2009 = 17 sessions of 3 hours.

Put all assignments, assignment guidance, and scheme of work in the form of a workbook on my website.

Put all instructional material on my website.

Publish the progress spreadsheet on my website as a pdf but with password access.

Email assignments will not be accepted.

The teacher is a facilitator, the student is in charge of own learning.

### Lesson observation, (Session 4).

My commenting postponed until July, (session 17), due to no feedback from lesson observation until 11 June, (session 14).

Lesson finding was 'satisfactory'. Areas for improvement were: -

- a. *Identifying and writing clear lesson aims and objectives.*
- b. *Questioning to check learners understanding.*
- c. *Activities to support learning.*
- d. *Identification of clear differentiation on LP.*

My responses to these comments are: -

- a. My personal lesson plan was shown on the big screen at the start of the lesson. I find the college written lesson plan wasteful of paper, unduly verbose, and unsuitable for display to the class on the big screen. I think the students are entitled to see what is planned for the lesson.
- b. Valid point – but difficult to get them to speak.
- c. The activities always follow the theory instruction, (outside exercises). It is illogical to fragment the instruction with activities that divert attention from the theory. I have tried this before but it wastes class time and the students prefer theory followed by practice.
- d. Valid point. However, how to do this without drawing attention to low achievers?

Written criticisms were: -

- e. *Students listened well for the first 25 minutes then they began to drift. The last 20 mins was wasted, more activities or demonstrations throughout this period may have helped that.*
- f. *Students over saturated-needed to include activities to check understanding and learning, Video of someone carrying out 'levelling'. would have helped.-*
- g. *2 students took notes no mention that from the tutor that it would support session or reinforce understanding.*

*There was also the verbal comment that the lesson would have been better with a video from 'You Tube' showing people levelling.*

My view of this lesson observation is that: -

The observer had no subject knowledge and therefore was in no position to judge the relative time spent on instruction and practice.

These students view themselves as adults and I should not have to remind them to take notes at each instruction session. They have been made well aware that they get information and

instruction from the lecturer, but learning comes from practice, *Knowledge is experience - everything else is just information (Albert Einstein)* ...In addition the students are fully aware that all my instructional material is available on my website where they can refresh their memories or notes.

I found nothing useful on You Tube – merely some 30 year old adolescents at play.

I consider that it is not my job to entertain students, but to provide information and the opportunity to practice that information.

#### Results at Session 17.

14 students started the course, 13 remain.

Average attendance is 77%.

All fieldwork successfully completed except for one student.

4 students have not handed in any assignments, (other lecturers report the same).

Grades awarded are: -

P	M	D
2	2	4

The final success rate is  $8/13 = 62\%$ .

Last year the success rate was 50%.

#### Analysis

Lesson observations are viewed by management with excessive importance. It is helpful for the lecturer to have peer assessment but the system has descended into a bureaucratic and judgemental exercise.

It is a waste of time and effort by both college and student if deterrents are not enforced for late assignments. Four of the students have handed in no work at all in spite of constant nagging, (one student told me he felt he was being victimised, but he still did not submit any work), and these were the students that the observer particularly noticed during the lesson observation. I believe that if deterrents had been enforced, these students would either have left the college or become focussed and achieved something.

I believe that by treating these young adults as if they were still at secondary school, that we are prolonging their adolescence and not preparing them for the world of work. In other words, we are doing them a disservice. They need to develop some independence and take responsibility for their actions.

Appendix – Attendance & progress Sheet

Lesson plans are on sheet two of this workbook and relevant comments are added each session, (as a journal).

Attendance, (green): - those who are absent for whatever reason do not receive an attendance mark on this sheet.

Fieldwork, (cyan): - A date is entered when each exercise is completed.

Assignments, (beige): - A date is entered on satisfactory completion.

DATE		COURSE PROGRAMME		ATTENDANCE/PROGRESS													TOTALS		
THURSDAY Room M212 1:15 to 4:30		SESSION No.	Edexcel NC2 Unit 10 Surveying in Construction and Civil Engineering		STUDENT	STUDENT	STUDENT	STUDENT	STUDENT	STUDENT	STUDENT	STUDENT	STUDENT	STUDENT	STUDENT	STUDENT		STUDENT	STUDENT
12-Feb-09	1		INTRODUCTION. Linear surveys.																
19-Feb-09			HALF TERM																
26-Feb-09	2	LINEAR SURVEY, (1001)																	13
05-Mar-09	3	PLOT LINEAR SURVEY, (1001)																	10
12-Mar-09	4	LEVELLING INSTRUCTION, Level check, (1002)																	12
19-Mar-09	5	UNDERTAKE A LEVELLING CIRCUIT, (1002)																	12
26-Mar-09	6	PLOT LEVELLING CIRCUIT, (1002)																	11
02-Apr-09	7	CATCH UP																	12
09-Apr-09			EASTER NO FOOD OR DRINKS IN CLASSROOMS																
16-Apr-09			EASTER NO FOOD OR DRINKS IN CLASSROOMS																
23-Apr-09	8	INSTRUCTION ON THEODOLITES																	12
01-May-09	9	Total Station set up and calibrate, (1003)																	12
07-May-09	10	INACCESSIBLE HEIGHTS, (1003)																	13
14-May-09	11	INACCESSIBLE HEIGHTS, (1003)																	11
21-May-09	12	CATCHUP																	10
25-May-09			HALF TERM																
04-Jun-09	13	SET OUT BUILDING BY THEOD. & TAPE, (1004)																	11
11-Jun-09	14	SET OUT BUILDING BY THEOD. & TAPE, (1004)																	5
18-Jun-09	15	CALCULATE PROFILES, (1004)																	8
29-Jun-09	16	Contingencies/formative assessment																	5
02-Jul-09	17	FINAL HAND IN																	4
ATTENDANCE TO DATE, (%)				82	94	65	82	82	82	71	100	59	94	59	59	65			
FIELDWORK DATES		FIELDWORK		SATISFACTORY COMPLETION															
5-Mar-09	3	Fieldwork 1001 - Measure Stairs	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	26/02	13
12-Mar-09	4	Fieldwork 1002 - Level Check	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	12/03	13
19-Mar-09	5	Fieldwork 1002 - Level Circuit	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	19/03	30/04	13
23-Apr-09	8	Fieldwork 1003 - Theod set up	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	23/04	13
7-May-09	10	Fieldwork 1003- Inaccessible Heights	07/05	14/05	07/05	07/05	14/05	07/05	07/05	07/05	07/05	07/05	07/05	14/05	07/05	07/05	07/05	13	
21-May-09	12	Fieldwork 1004 - Set out building	04/06	04/06	04/06	04/06	04/06	04/06	11/06	04/06	04/06	04/06	04/06	04/06	04/06	11/06	11/06	12	
FIELDWORK OUTSTANDING				1															
SUBMITTAL DATES		ASSIGNMENTS		SATISFACTORY COMPLETION															
12-Mar-09	4	ASSIGNMENT 1001 LINEAR SURVEY	12/03	18/06		26/03	02/04	27/03	30/04	02/04		12/03	07/05					9	
2-Apr-09	7	ASSIGNMENT 1002 LEVELLING	02/04	18/06		07/05	24/04	02/04	30/04	24/04		07/05						8	
21-May-09	12	ASSIGNMENT 1003 INACCESSIBLE HEIGHTS	14/04	18/06		14/05	18/06	21/05	11/06	21/05		18/06	02/07					9	
11-Jun-09	14	ASSIGNMENT 1004 SET OUT A SMALL BUILDING	11/06	05/06	04/06	18/06	18/06	04/06	18/06	11/06		11/06	02/07					10	
ASSIGNMENTS OUTSTANDING				3			4				1		4		4				
ASSIGNMENT	GC	GRADING CRITERIA		GRADING CRITERIA ACHIEVED															
1001	P1	Carry out linear surveys and produce clear and accurate drawings		12/03	18/06		26/03	02/04	27/03	30/04	02/04		12/03	07/05				9	
1002	P2	Carry out levelling surveys and produce clear and accurate drawings		02/04	18/06		07/05	24/04	02/04	30/04	24/04		07/05					8	
1003	P3	Carry out angular measurements and produce accurate results from calculations		14/04	18/06		14/05	18/06	21/05	11/06	21/05		18/06	02/07				9	
1004	P4	Set out and check corner pegs for a small building		11/06	05/06	04/06	18/06	18/06	04/06	18/06	11/06		11/06	02/07				10	
1002	M1	Carry out levelling calculations using both height of collimation and rise and fall methods		02/04			07/05	30/04	02/04	30/04			07/05	02/07				7	
1003	M2	Use angular measurements and trigonometry to calculate heights and distances		14/04	18/06		14/05	18/06	21/05	11/06	21/05		18/06					8	
1004	M3	Set out and check profiles for a small building		11/06	05/06	04/06	18/06	18/06	04/06	18/06	11/06		11/06	02/07				10	
1001	D1	Analyse the methods used for linear survey in terms of accuracy		02/04			18/06	02/04	27/03	30/04			12/03					6	
1003	D2	Analyse the methods used in angular measurements in terms of trigonometric accuracy		14/04			14/05	18/06	21/05	11/06	21/05		18/06					7	
1004	D3	Explain the constraints on the positioning of profiles			05/06		18/06	18/06	04/06				11/06	02/07				6	
GRADE AWARDED				M	P		D	D	D	M	P		D						

August 2009. Reflections on Feedback, (formative assessment).

- a. To date my feedback has consisted of a list of deficiencies. Let's try to improve this.
- b. Knight and Yorke (2003:135) quote Stowell (2001) in discussing the role of formative assessment as follows: -  
*Formative assessment is concerned with maximising the learning of each individual student. In theory, each student should receive feedback that is most appropriate to their learning needs. Feedback should therefore be differentiated. The problem occurs on the assessor's side when time and resources are constrained. The assessor then has to make choices regarding the amount of feedback that should be given to each individual. The choices they make will reflect personal value judgements about the purposes of education: some teachers will opt for 'levelling up' in the interests of social justice, whereas others will give priority to 'high flyers', seeing their action in Darwinian 'survival of the fittest' terms.*
- c. Knight and Yorke (2003:126) also describe the purposes of formative assessment in general as follows: -Three purposes of formative assessment.
  - i. *To give credit for what has been done, with reference to the expected standard.*
  - ii. *To correct what is wrong, thereby helping the student to avoid repeating the error (hence merely saying that something is wrong is insufficient).*
  - iii. *To encourage emancipation by alerting the student to possibilities which they may not have hitherto discerned.*
- d. Differentiation is covered by the personal nature of individual feedback; *ci.* and *cii.* are covered historically, it remains to effectively cover encouragement but in some form that does not add to the instructors workload, and encourages the student to actually read the feedback, and not just accept a grade.
- e. An 'Assignment Return Sheet' is proposed that will be handed in with the assignment and to include a student self-assessment section. When the sheet is returned to the student, any disparity between the self-assessment and the moderated assessment can be discussed along with any deficiencies, (if any). Errors in the assignment can be given a number that will correspond with that on the Assignment Return Sheet'. Will it work? Check with colleagues.
- f. Provide PowerPoint speaker note as handouts, (*not the slides, students think that they do not have to attend lectures if they have copies of the slides*). Students' note taking is always unsatisfactory, (*I was a student once*), and diverts attention from what is going on. The slides are available on my web site.

## 6. CycleThree

### Starting Strategies

1 April 2010 to 8 July 2010 = 12 sessions of 4.5 hours, and 16 students.

Put all assignments, assignment guidance, and the scheme of work in the form of a workbook on my website, also issue paper copies to all students on day one.

After due consultation the 'Assignment Evaluation Sheet' was scrapped.

Publish the progress spreadsheet on my website as a PDF but with password access.

Email assignments will not be accepted.

The teacher is a facilitator, the student is in charge of own learning.

Window blinds in the room allocated to this unit were broken – this diluted the ceiling mounted projector to the extent that it was unusable. Moved rooms for two sessions of 1.5 hours.

### Observation, Analysis, and Action, (Session 5).

Window blinds still not fixed.

4 students dropped out or very low attendance..

Many students seem not to listen or concentrate during instruction, and then request individual tuition.

The guidance sheet is widely ignored, except by me!

40% of scheduled assignments successfully completed.

80% fieldwork completed.

### Observation, analysis and Action, (Session 12).

Window blinds still not fixed.

Achievements were: - 2 passes, 7 merits, 3 distinctions.

The 4 failures had attendances of 9%, 51%, 6%, and 26%, only one assignment was handed in and this did not reach a 'pass' grade.

### Comparison of achievements.

YEAR/CYCLE	PASS	MERIT	DISTINCTION	TOTALS
1	0	4	2	6
2	2	2	4	8
3	2	7	3	12

This table seems to indicate a gradual improvement over time.

I attribute this to: -

Issuing the workbook on day one. All students know what they have to do and when.

Showing progress on the big screen at the start of each session.

Insisting on compliance with the Guidance instructions.

DATE		COURSE PROGRAMME		ATTENDANCE/PROGRESS																TOTALS	
MEETING No.		Edexcel ND/NC2 Unit 10 Surveying in Construction and Civil Engineering		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Thursday		Instructor: Keith Dennison Website: www.keithdennison.com																			
09:00 - 10:30																					
10:45 - 12:15																					
13:15 - 14:45																					
01/04/10	1	INTRODUCTION. Linear surveys. Measure stair. (1001)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
01/04/10	1	INTRODUCTION. Linear surveys. Measure stair. (1001)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
08/04/10	1	INTRODUCTION. Linear surveys. Measure stair. (1001)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
<b>EASTER</b>																					
15/04/10	2	PLOT STAIR. (1001)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
22/04/10	2	PLOT STAIR. (1001)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
29/04/10	3	LEVELLING INSTRUCTION. Level check. (1002)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
06/05/10	3	LEVELLING INSTRUCTION. Level check. (1002)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
13/05/10	4	UNDERTAKE A LEVELLING CIRCUIT. (1002)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
20/05/10	4	UNDERTAKE A LEVELLING CIRCUIT. (1002)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
27/05/10	5	PLOT LEVEL CIRCUIT		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
03/06/10	5	PLOT LEVEL CIRCUIT		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
10/06/10	6	INSTRUCTION ON THEODOLITES		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
17/06/10	6	INSTRUCTION ON THEODOLITES		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
24/06/10	7	Total Station set up and calibrate. (1003)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
01/07/10	7	Total Station set up and calibrate. (1003)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
08/07/10	7	Total Station set up and calibrate. (1003)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
<b>HALF TERM</b>																					
15/07/10	8	INACCESSIBLE HEIGHTS. (1003)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
22/07/10	8	INACCESSIBLE HEIGHTS. (1003)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
29/07/10	9	SET OUT BUILDING BY THEOD. & TAPE. (1004)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
05/08/10	9	SET OUT BUILDING BY THEOD. & TAPE. (1004)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
12/08/10	9	SET OUT BUILDING BY THEOD. & TAPE. (1004)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
19/08/10	10	CALCULATE PROFILES. (1004)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
26/08/10	10	CALCULATE PROFILES. (1004)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
02/09/10	11	Contingencies/formative assessment		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
09/09/10	11	Contingencies/formative assessment		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
16/09/10	12	FINAL MEETING		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
23/09/10	12	FINAL MEETING		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
30/09/10	12	FINAL MEETING		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
<b>ATTENDANCE TO DATE, (%)</b>				9	71	77	83	83	91	77	86	51	100	6	83	100	77	26	86		
<b>FIELDWORK DATES</b>		<b>FIELDWORK</b>		<b>FIELDWORK SIGNED OFF</b>																	
01/04/10	1	Fieldwork 1001 - Measure Stairs		01/04	01/04	01/04	01/04	22/04	01/04	01/04	01/04	01/04	01/04	01/04	01/04	22/04	01/04	22/04	01/04	01/04	15
29/04/10	3	Fieldwork 1002 - Level Check		13/05	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	29/04	12
06/05/10	6	Fieldwork 1002 - Level Circuit		13/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	06/05	13
13/05/10	5	Office work 1002 - Plot sections		13/05	13/05	24/06	13/05	20/05	13/05	20/05	20/05	20/05	20/05	20/05	13/05	17/06	13/05	20/05	20/05	11	
20/05/10	6	Fieldwork 1003 - Theod set up		08/07	20/05	20/05	20/05	20/05	20/05	20/05	20/05	20/05	20/05	20/05	20/05	08/07	20/05	20/05	20/05	12	
27/05/10	7	Fieldwork 1003 - Inaccessible Heights		24/06	10/06	10/06	10/06	10/06	10/06	10/06	10/06	10/06	10/06	24/06	10/06	24/06	10/06	20/05	12		
17/06/10	9	Fieldwork 1004 - Set out building		01/07	01/07	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	17/06	14
<b>FIELDWORK OUTSTANDING</b>				6										5		6				5	
<b>SUBMITTAL DATES</b>		<b>ASSIGNMENTS</b>		<b>ASSIGNMENTS SIGNED OFF</b>																	
29/04/10	3	ASSIGNMENT 1001 LINEAR SURVEY		09/07	29/04	10/06	29/04	29/04	Circuit	13/05	29/04	08/07		29/04	06/05	29/04		20/05	12		
13/05/10	5	ASSIGNMENT 1002 LEVELLING		24/06	13/05	24/06	13/05	20/05	13/05	13/05	13/05		10/06	13/05	17/06	13/05		10/06	12		
10/06/10	8	ASSIGNMENT 1003 INACCESSIBLE HEIGHTS		08/07	10/06	10/06	10/06	10/06	10/06	10/06	10/06		24/06	10/06	08/07	10/06		17/06	12		
24/06/10	10	ASSIGNMENT 1004 SET OUT A SMALL BUILDING		01/07	01/07	24/06	17/06	24/06	01/07	24/06		01/07		24/06	24/06	17/06		24/06	12		
<b>ASSIGNMENTS OUTSTANDING</b>				4									3		4				4		
<b>ASSIGNMENT</b>		<b>GRADING CRITERIA</b>		<b>GRADING CRITERIA ACHIEVED</b>																	
1001	P1	Carry out linear surveys and produce clear and accurate drawings		09/07	29/04	10/06	29/04	29/04	29/04	13/05	29/04	08/07		29/04	06/05	29/04		21/05	13		
1002	P2	Carry out levelling surveys and produce clear and accurate drawings		24/06	13/05	24/06	13/05	20/05	13/05	20/05	13/05		10/06	13/05	17/06	13/05		10/06	12		
1003	P3	Carry out angular measurements and produce accurate results from calculations		08/07	10/06	10/06	10/06	10/06	10/06	10/06	10/06		24/06	10/06	08/07	10/06		17/06	12		
1004	P4	Set out and check corner pegs for a small building		01/07	08/07	24/06	17/06	24/06	01/07	24/06		01/07		24/06	24/06	17/06		24/06	12		
1002	M1	Carry out levelling calculations using both height of collimation and rise and fall methods		24/06	13/05	24/06	13/05	20/05	13/05	20/05		10/06	13/05	17/06	13/05		10/06	12			
1003	M2	Use angular measurements and trigonometry to calculate heights and distances		08/07	10/06	10/06	10/06	10/06	10/06	10/06		24/06	10/06	08/07	10/06		17/06	12			
1004	M3	Set out and check profiles for a small building				24/06	17/06	24/06	01/07	24/06		01/07		24/06	24/06	17/06		24/06	10		
1001	D1	Analyse the methods used for linear survey in terms of accuracy				10/06	21/05		29/04									29/04	5		
1003	D2	Analyse the methods used in angular measurements in terms of trigonometric accuracy		08/07			17/06		10/06	24/06								10/06	5		
1004	D3	Explain the constraints on the positioning of profiles				24/06	24/06	24/06	01/07	24/06					24/06	24/06	24/06	01/07	9		
<b>GRADE AWARDED</b>				P	P	M	D	M	D	M		M		M	M	D		M	12		

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